DOCUMENT RESUME

ED 031 459 SP 002 956

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The Research Context and the Goals of Teacher Education: Another Perspective.

Toledo Univ., Ohio. Coll. of Education.
Pub Date Jun 69
Note-7p.
Available from-Mr. Richard Saxe, editor, EDUCATIONAL COMMENT, The University of Toledo, College of Education, Toledo, Ohio 43606
Journal Cit-Educational Comment; p133-38 Jun 1969
EDRS Price MF-$0.25 HC-$0.45
Descriptors-*Behavioral Objectives, *Educational Research, Research Needs, *Teacher Education

One can agree with Donald M. Medley (Educational Testing Service) that "research in teaching has neglected individual differences among teachers" without accepting his statement that the "behavioral goals of teacher education are an individual matter." A teacher, while finding behaviors relevant for himself, should be able to begin with certain truths already provided by research; and conversely, what he discovers should be generalizable to others. A model which would produce knowledge necessary for the understanding and control of teacher behavior, without assuming that there is one behavior pattern for all may be derived from an empirical study of teacher-learner interactions. The results would provide the teacher with information on the probability of various responses occurring in a given situation; yet this general frame of reference could be altered to accommodate the particular strengths of teachers and learning styles of students. (LP)

ED031459

EDUCATIONAL COMMENT/1969

Contexts For Teacher Education

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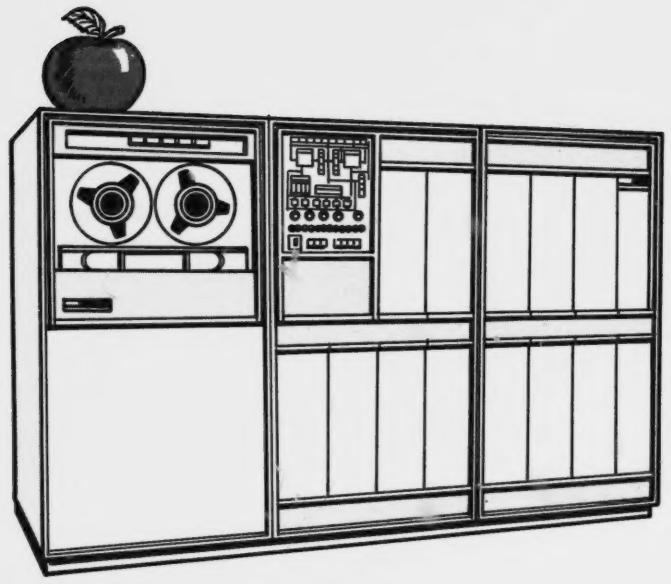

Edited by Richard Saxe

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THE RESEARCH CONTEXT AND THE GOALS OF TEACHER EDUCATION: ANOTHER PERSPECTIVE

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One might react to Medley's paper directly, or he might address himself to the same general questions considered by Medley and let the reader search for contrasts and comparisons. Since neither approach appears significantly superior to the other, this paper will utilize the two in combination. The questions into which the persons commissioning both papers seek insight appear to me to be as follows:

1. What questions relevant to Teacher Education has research not answered satisfactorily, and how might more satisfactory answers be acquired?

2. What questions relevant to Teacher Education has research answered in a reasonably adequate fashion, where are these answers to be found, and how might they be incorporated into the building of the proposed new elementary teacher preparation program?

The Present and the Promise

One perspective of the state of research in teacher education can be summarized as follows:[1]

1. The extant research in teacher education is neither extensive nor profound. This research has had only a minimal impact upon teacher-education curricula.

2. Knowledge about teacher education fails to take into account the findings of educational research; moreover, research in teacher education has traditionally been so narrowly defined as to exclude from study the most important elements of the education of teachers, e.g., compilations such as the **Handbook of Research on Teaching.**

3. Teacher education research has been approached in an unimaginative fashion and with no communicable frame of reference.

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The absence of common assumptions, theory, and conceptual framework prevents seemingly related studies from being synthesized and rendered capable of producing broadly applicable generalizations.

4. In spite of past shortcomings, we are about to participate in a renaissance of teacher education research in terms of its scope, significance, methodology, and utilization.

The studies of teacher behavior which have gained prominence in the past five years are especially pregnant with promise for teacher education. The history of research on teacher effectiveness shows that investigations have been directed toward identifying (1) what the teacher knows, (2) what the teacher is as a person, and (3) what the teacher values. From these data, inferences have been made as to how the teacher will behave in the classroom. It is becoming increasingly apparent that the inverse of this sequence holds more promise for producing valid substance for teacher education. In specific terms, what a teacher does as he performs his tasks must be determined before the knowledge and experience needed in developing these teaching skills can be ascertained.[2] Such studies have peculiar advantage because: a) application to practice is easier since the research has been conducted in the classroom, and b) the research methodology and instrumentation has as much potential for changing teacher education curricula as do the results or substantive findings.[3]

Why has so little productive interaction between practicing teacher educators and active researchers in the field occurred? The answer is deceptively simple. On the one hand we have had the theoreticians and scholars in teacher education asking questions of a dynamic nature such as: What student behaviors occur when a teacher poses an open question to a third grade class or to a high school history class? Are the specific behaviors characteristic of teachers in slum schools equally appropriate in schools in higher socio-economic neighborhoods?

On the other hand teacher education practitioners have based their programs on questions and answers of a completely different and more static order: What are the common characteristics and attitudes of teachers? What are the major facets of predominant educational philosophies? With what theories of learning should teachers be familiar?

This condition poses an obvious anomaly in teacher education today. Theoreticians postulate certain questions as being most crucial while practitioners imply different questions by their practices. Current teacher education programs are organized around the questions to which teacher educators have answers, even though modern teacher-behavior researchers and enlightened persons operating teacher preparation programs agree that these are not the crucial understandings required. Since one must have answers to organize programs, we can be thankful that research on critical, dynamic questions is reaching the stage where answers are appearing and it is becoming possible to integrate this knowledge into teacher preparation curricula.[4]. The publication **The Way Teaching Is** contains a provacative discussion of this general phenomenon.[5]

A Model for the Study of Teacher-Learner Interaction

My reaction to Medley's paper is, in general, a positive one. Certainly his work is heuristic and provocative. However, I suspect that he has thrown the conceptual ball into left field in order to coax us out to second base. At least this writer finds himself agreeing with the nature but disagreeing with the degree of his conclusions.

Medley concludes that " . . . research in teaching has neglected individual differences among teachers." With this generalization we have no quarrel. However, to say that **"the behavioral goals of teacher education are an individual matter"** carries the concept to an extreme where "anything goes." This degree of virtual total dependence upon individual differences is antithetical to scientific method. If our goal is to build a core of valid substance for teacher education, we must seek principles and generalizations rather than a proliferation of how many different ways an activity can be carried out.

How might we arrive at a model of what is needed which will produce both the scientific knowledge necessary to understand and control teacher behavior and at the same time avoid the pitfall, clearly identified by Medley, of assuming that there is one pattern of action which is most effective for all teachers?

First, let us assume that what a teacher says and does while teaching has important effects upon the behaviors of learners. The inverse of this statement is also true. Consequently, the dynamics of teacher-learner interaction constitute the arena for study. What is needed to produce significant knowledge for teacher education is empirically derived relationships between a taxonomy of teacher behaviors and a taxonomy of learner behaviors. Such relationships would of necessity be probabilistic in nature. They would also be con-

ditioned by certain variables, assumed to be relevant now but subject to verification as the research data are amassed, such as subject areas, school settings (inner-city, suburban, rural), etc. The findings might be in the following form: When a teacher asks an open question to a third grade class the following may occur — **a.** 50% of the class will pause to think about the question and will delay responding; **b.** 10% of the class will immediately have answers of two types, those arrived at superficially and those arrived at by prior consideration; **c.** 15% of the class will fail to think of the question in an "open" context, but will search for recall data; **d.** 15% of the class will misinterpret the question, and **e.** 10% of the class will be disinterested or inattentive.

Obviously these are broad generalizations, but they do have value, both for identifying the scope of responses and for describing their distribution in the abstract. It is vital, however, that this generalized frame-of-reference be refined and the strength of the probability relationships increased in the specific. It is hypothesized that this can be accomplished by adding the factor of individual teaching style and the related concept of individual student learning style. Thus, with a teacher who possesses certain teaching and personality strengths, this general finding may be skewed and its powers of prediction positively altered. At the same time, learners with known relevant learning style variables may have a similar effect upon the classroom interactions. In addition, attention must be given to describing sequences of teacher behavior and the relationships between such sequences and learner behavior patterns. The product of such a model is a broad base of interrelated valid knowledge which is both specific and generalizable, which presumably can be translated into skills through appropriate training, which is directly related to classroom performance, and which has the relationships capable of generating defensible explanatory theory.[6]

Implications for Teacher Education

Medley postulates that "the proper function of the 'professional' component in a teacher education program is to prepare each teacher to find out for himself what behaviors are effective for him." This writer concurs with this idea to a point, but not if it implies that each teacher begins as though he must reinvent the alphabet. While past research on teaching and teacher education has been woefully deficient, we have some valid knowledge (for example, the teacher who cannot differentiate between random and systematic error in a pupil's performance has little basis for re-teaching) and we have a professional and scholarly obligation to seek more.

In a recent article, Foshay[7] suggests that a fruitful frame-of-reference for investigating teaching activities is that of identifying non-relevant variables, relevant but non-controllable variables, and variables that are both relevant and manipulatable. Obviously, concentration upon the latter is possible only as these are differentiated from those in former categories. It is granted that while our list of items in each category is far too short, neither are the columns completely empty. The framework itself may be helpful to the neophyte teacher who is discovering, not his private truth, but rather his most effective variation and interpretation of an acknowledged public truth.

Dr. Medley's objectives of (1) experimental attitude, (2) theoretical knowledge, (3) technical skill, and (4) feedback techniques are superb. They are as useful to the position taken herein as they are to his own projected program. In a similar vein, Medley's hope that "research, evaluation, and what might be called the teacher's own clinical experience can all merge into a single operation which has the potential of achieving the functions of all three — development of research knowledge, provision of continuous diagnostic feedback to the program, and the facilitation of teacher self-improvement" is the wish of this writer also. We differ only in the extent to which we believe and/or desire the knowledge thus accumulated can be generalized to benefit others than the individual teacher who generated it.

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